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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,066	10/21/2004	Sadahiko Matsuura	1155-0280PUS1	8570
2292	7590	07/10/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			LEE, RIP A	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			1713	
DATE MAILED: 07/10/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/512,066

Applicant(s)

MATSUURA ET AL.

Examiner

Rip A. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 5,6 and 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 8-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10-21-04; 04-22-05 + 03-27-06; 05-23-06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, species I, claims 1-4 and 7-10 in the reply filed on April 20, 2006 is acknowledged. The restriction requirement is made FINAL.

### ***Specification***

2. The abstract of the disclosure is objected to because it is too lengthy. Correction is suggested.

### ***Claim Objections***

3. Claims 8-10 are objected to because of the following informalities: Please correct multiple dependency. Appropriate correction is required.
4. Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. The recited pressure and temperature do not appear to limit further that recited in the parent claim.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is lack of antecedent basis for the term "ethylene/propylene/non-conjugated diene" in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mehta *et al.* (U.S. 6,300,451).

Mehta *et al.* discloses a process of making an ethylene/ $\alpha$ -olefin/non-conjugated diene (ethylene/butene/1,5-hexadiene) copolymer in the presence of a hydrocarbon solvent and a transition metal based catalyst. The reaction temperature is above 140 °C, and the reactor pressure is about 1300 bar (130 MPa); see Table 1. After polymerization, solvent is removed and the polymer is recovered (example 2). The reference does not indicate the mathematical

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relationship between iodine value and concentration of polyene as recited in the instant claims. However, in light of the fact that the process is essentially the same as that recited in the instant claim (*i.e.*, transition metal catalyst, hydrocarbon solvent, temperature greater than 100 °C, pressure above 2.7 MPa), a reasonable basis exists to believe that the this property inherently exists in the process disclosed in the prior art. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The reference does not indicate specifically that unreacted monomer is removed from the reaction mixture. However, one of ordinary skill in the art would have found it obvious to remove unreacted materials and impurities in order to recover pure product. Also, one of ordinary skill in the art would have found it obvious that unreacted monomer would also be evaporated under a nitrogen stream, especially in view of the fact that the boiling point of 1,5-hexadiene is 60 °C. Again, Applicants bear the burden to establish an unobviousness difference.

4. Claims 1-4 and 7-10 rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, 35 U.S.C. 103(a) as obvious over Kolthammer *et al.* (WO 98/02471).

Kolthammer *et al.* discloses a process of making an ethylene/ $\alpha$ -olefin/non-conjugated diene (ethylene/propylene/ENB) copolymer in the presence of a hydrocarbon solvent and a transition metal based catalyst. The reaction temperature is above 115 °C, and the reactor pressure is about 525 psig (3.62 MPa); see Table 3 and page 46, line 15. After polymerization, solvent and unreacted monomer is removed (see Figures 1 and 2). The reference does not indicate the mathematical relationship between iodine value and concentration of polyene as recited in the instant claims. However, in light of the fact that the process is essentially the same as that recited in the instant claim (*i.e.*, transition metal catalyst, hydrocarbon solvent, temperature greater than 100 °C, pressure above 2.7 MPa), a reasonable basis exists to believe that the this property inherently exists in the process disclosed in the prior art. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

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5. The international search report for Applicants' corresponding WO 2004/065435 indicates JP 63-8408 (claims, examples) and JP 2-142807 (claims, examples) as "X" references against the subject matter of claims 1-4. Upon further inspection, it is concluded that these references do not anticipate the subject matter of instant claim 1. Although processes for making ethylene/ $\alpha$ -olefin/non-conjugated diene copolymer is disclosed in general, the processes shown are not carried out under the conditions recited in the claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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June 30, 2006

  
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